

## Zambia

**W**orldwide, over 500,000 women and girls die of complications related to pregnancy and childbirth each year. Over 99 percent of those deaths occur in developing countries such as Zambia. But maternal deaths only tell part of the story. For every woman or girl who dies as a result of pregnancy-related causes, between 20 and 30 more will develop short- and long-term disabilities, such as obstetric fistula, a ruptured uterus, or pelvic inflammatory disease (see box on page 2).

Zambia's maternal mortality rate continues at an unacceptably high level. While maternal mortality figures vary widely by source and are highly controversial, the best estimates for Zambia suggest that approximately 4,000 women and girls die each year due to pregnancy-related complications. Additionally, another 80,000 to 120,000 Zambian women and girls will suffer from disabilities caused by complications during pregnancy and childbirth each year.<sup>1</sup>

The tragedy – and opportunity – is that most of these deaths can be prevented with cost-effective health care services. Reducing maternal mortality and

disability will depend on identifying and improving those services that are critical to the health of Zambian women and girls, including antenatal care, emergency obstetric care, adequate postpartum care for mothers and babies, and family planning and STI/HIV/AIDS services. With this goal in mind, the Maternal and Neonatal Program Effort Index (MNPI) is a tool that reproductive health care advocates, providers, and program planners can use to:

- Assess current health care services;
- Identify program strengths and weaknesses;
- Plan strategies to address deficiencies;
- Encourage political and popular support for appropriate action; and
- Track progress over time.

Health care programs to improve maternal health must be supported by strong policies, adequate training of health care providers, and logistical services that facilitate the provision of those programs. Once maternal and neonatal programs and policies are in place, all women and girls must be ensured equal access to the full range of services.

### At-A-Glance: Zambia

Population, mid-2001	9.8 million
Average age at first marriage, all women	18 years
Females giving birth by age 20	63%
Births attended by skilled personnel	47%
Total fertility rate (average number of children born to a woman during her lifetime)	6.1
Children who are exclusively breastfed at ages less than 6 months	19%
Contraceptive use among married women, ages 15-49, modern methods	14%
Abortion policy, 2000	Permitted on broad socioeconomic and health grounds, or without restriction as to reason, with gestational limits

Sources: Population Reference Bureau – 2002 *Women of Our World*; 2001 *World Population Data Sheet*; *The World Youth 2000*; and 1999 *Breastfeeding Patterns in the Developing World* (see <http://www.worldpop.org/datafinder.htm>).

## Understanding the Causes of Maternal Mortality and Morbidity

**M**aternal mortality refers to those deaths which are caused by complications due to pregnancy or childbirth. These complications may be experienced during pregnancy or delivery itself, or may occur up to 42 days following childbirth. For each woman who succumbs to maternal death, many more will suffer injuries, infections, and disabilities brought about by pregnancy or childbirth complications, such as obstetric fistula.<sup>2</sup> In most cases, however, maternal mortality and disability can be prevented with appropriate health interventions.<sup>3</sup>

Some of the direct medical causes of maternal mortality include hemorrhage or bleeding, infection, unsafe abortion, hypertensive disorders, and obstructed labor. Other causes include ectopic pregnancy, embolism, and anesthesia-related risks.<sup>4</sup> Conditions such as anemia, diabetes, malaria, sexually transmitted infections (STIs), and others can also increase a woman's risk for complications during pregnancy and childbirth, and, thus, are indirect causes of maternal mortality and morbidity. Since most maternal deaths occur during delivery and during the postpartum period, emergency obstetric care, skilled birth attendants, postpartum care, and transportation to medical facilities if complications arise are all necessary components of strategies to reduce maternal mortality.<sup>5</sup> These services are often particularly limited in rural areas, so special steps must be taken to increase the availability of services in those areas.

Efforts to reduce maternal mortality and morbidity must also address societal and cultural factors that impact women's health and their access to services. Women's low status in society, lack of access to and control over resources, limited educational opportunities, poor nutrition, and lack of decision-making power contribute significantly to adverse pregnancy outcomes. Laws and policies, such as those that require a woman to first obtain permission from her husband or parents, may also discourage women and girls from seeking needed health care services – particularly if they are of a sensitive nature, such as family planning, abortion services, or treatment of STIs.

Traditional practices that affect maternal health outcomes include early marriage and female genital cutting. Many women in sub-Saharan Africa marry before the age of 20. Pregnancies in adolescent girls, whose bodies are still growing and developing, put both the mothers and their babies at risk for negative health consequences.

Female genital cutting, also known as female circumcision or genital mutilation, is a practice that involves removing all or part of the external genitalia and/or stitching and narrowing the vaginal opening (which is called infibulation). The practice is common in some parts of Africa and the Middle East. Social, cultural, religious, and personal reasons support the persistence of this practice. Some of these reasons include maintaining tradition and custom, promoting hygiene or aesthetics, upholding family honor, controlling women's sexuality and emotions, and protecting women's virginity until marriage.<sup>6</sup> Many women and girls who undergo female genital cutting, particularly those who undergo Type III cutting or infibulation, experience health problems including hemorrhage, pain, infection, perineal tears, and trauma during childbirth. They often also experience psychological and sexual problems.

The consequences of maternal mortality and morbidity are felt not only by women but also by their families and communities. Children who lose their mothers are at an increased risk for death or other problems, such as malnutrition. Loss of women during their most productive years also means a loss of resources for the entire society.

Ensuring safe motherhood requires recognizing and supporting the rights of women and girls to lead healthy lives in which they have control over the resources and decisions that impact their health and safety. It requires raising awareness of complications associated with pregnancy and childbirth, providing access to high quality health services (antenatal, delivery, postpartum, family planning, etc.), and eliminating harmful practices.

## Maternal and Neonatal Program Effort Index

In 1999, around 750 reproductive health experts evaluated and rated maternal and neonatal health services as part of an assessment in 49 developing countries.<sup>7</sup> The results of this study comprise the MNPI, which provides both international and country-specific ratings of relevant services. Using a tested methodology for rating programs and services,<sup>8</sup> 10 to 25 experts in each country – who were familiar with but not directly responsible for the country's maternal health programs – rated 81 individual aspects of maternal and neonatal health services on a scale from 0–5. For convenience, each score was then multiplied by 20 to obtain an index that runs from 0–100, with 0 indicating a low score and 100 indicating a high score.

The 81 items are drawn from 13 categories, including:

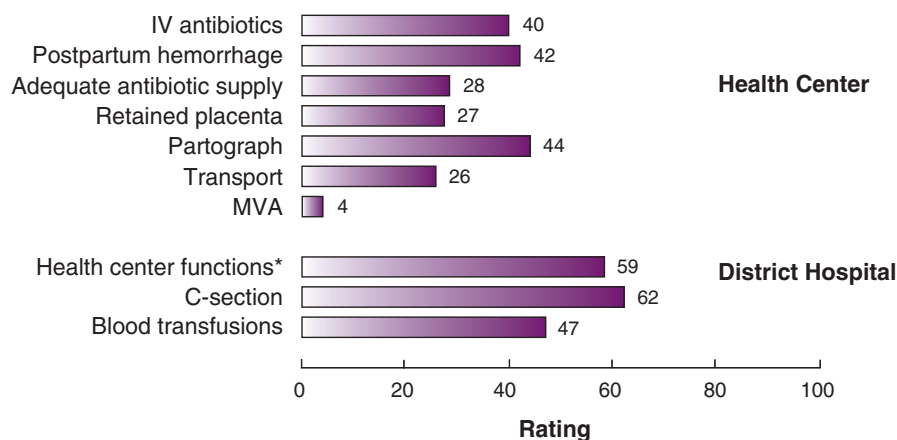
- Health center capacity;
- District hospital capacity;
- Access to services;
- Antenatal care;
- Delivery care;
- Newborn care;
- Family planning services at health centers;
- Family planning services at district hospitals;
- Policies toward safe pregnancy and delivery;
- Adequacy of resources;
- Health promotion;
- Staff training; and
- Monitoring and research.

Items from these categories can be grouped into five types of program effort: service capacity, access, care received, family planning, and support functions. The following five figures, organized by type of program effort, present the significant indicators from the Zambia study.

## Service Capacity

Overall, Zambia's service capacity to provide emergency obstetric care received a rating of 43 out of 100. Figure 1 shows ratings of the capacity of health centers and district hospitals to provide specific services. Health centers received low to moderate ratings for providing a variety of services. Using a partograph (44) and care for postpartum hemorrhage (42) are the most commonly available services at health centers in Zambia, while providing vacuum aspiration of the uterus (MVA) for postabortion care (4) is the least available service. District hospitals received moderate ratings for providing a range of health center functions (59) and performing Cesarean-sections (62). Blood transfusions (47) are the least available service among those assessed at district hospitals in Zambia.

**Figure 1. Service capacity of health centers and district hospitals in Zambia**

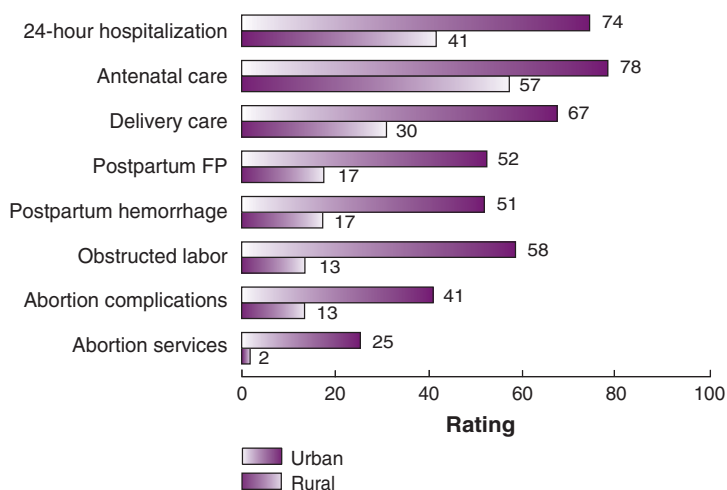


\*Refers to all those functions performed by the health center.

## Access

In most developing countries, access to safe motherhood services in rural areas is more limited than in urban areas. This issue is of particular significance for Zambia since the majority (62 percent) of its population lives in rural areas.<sup>9</sup> Overall, Zambia received a rating of 40 for access, with an average of 24 for rural access and 56 for urban access. Figure 2 presents the rural and urban access ratings for eight services. For each service area, there are large gaps in the ratings for rural and urban access, particularly with regard to treatment for obstructed labor (13 vs. 58, respectively). Rural access scores ranged from a low of 2 for safe abortion services to a high of 57 for antenatal care – suggesting an urgent need to increase access to a variety of services. Even when considering urban access, most services received moderate scores that indicate much room for improvement.

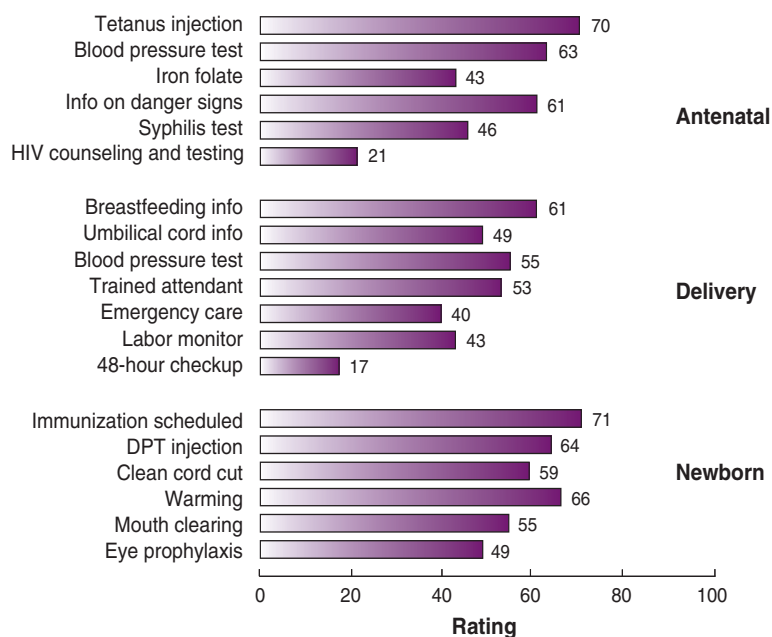
**Figure 2. Comparisons of access to services for rural and urban areas in Zambia**



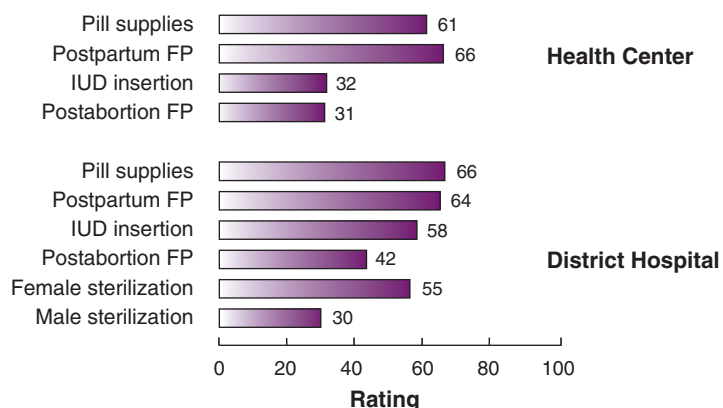
## Care Received

In most countries, newborn services are rated higher than delivery care or antenatal care, and this was the case for Zambia as well. Overall, care received was given a rating of 52, with newborn care receiving an average rating of 61 compared to 51 for antenatal care and 53 for delivery care. Figure 3 presents key indicators for each type of care. One of the more important indicators of maternal mortality is the presence of a trained attendant at birth,<sup>10</sup> which received a rating of 53. Other crucial elements that reduce maternal mortality are emergency obstetric care and the 48-hour postpartum checkup, which are only rated 40 and 17, respectively. The 48-hour postpartum checkup (17) and voluntary counseling and testing for HIV (21) were given the lowest ratings for care received, while immunization scheduled for newborns (71) and tetanus injections for pregnant women (70) received the highest ratings.

**Figure 3. Antenatal, delivery and newborn care received in Zambia**



**Figure 4. Provision of family planning services at health centers and district hospitals in Zambia**

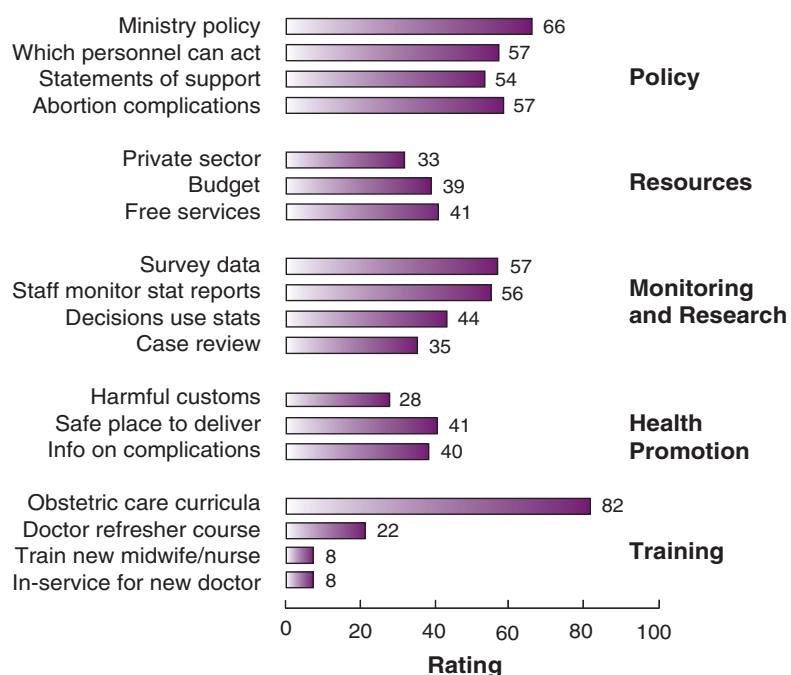


## Family Planning

Overall, family planning services provided by health centers and district hospitals in Zambia together received a rating of 51. Figure 4 presents the ratings for individual family planning services provided by health centers and district hospitals. These ratings consider facility capacity, access, and care received. Both health centers and district hospitals received moderate ratings for pill supplies (61 vs. 66, respectively) and postpartum family planning (66 vs. 64). District hospitals (58) received higher ratings than health centers (32) when considering IUD insertion. Postabortion family planning (31) and IUD insertion (32) were the lowest rated services for health centers, while male sterilization was the lowest for district hospitals (30).

## Policy and Support Functions

**Figure 5. Policy and support functions in Zambia**



Policy and support functions in Zambia received an overall rating of 42. Ratings for support functions, shown in Figure 5, are divided into the following categories: policy, resources, monitoring and research, health promotion, and training. In relation to the other support functions, policy generally received the highest ratings. Zambia's ministry-level policy on maternal health received a relatively strong rating of 66. Commitment to this policy, however, needs to be reinforced through more frequent statements to the press and public by high-level government officials – an aspect of policy that only received a rating of 54. Policies regarding treatment for abortion complications (57) and which personnel can provide maternal health services (57) should also be developed.

Policies, even when they have been adopted, do not automatically translate into quality services at the local level. Many of the support functions in Zambia, including resources, monitoring and research, health promotion, and training, are in need of further development. In terms of resources, ratings of the private sector (33) lagged slightly behind ratings on the availability of free services and the budget, which received scores of 41 and 39, respectively. The ratings also suggest that Zambia is in need of improved monitoring and research capabilities, particularly a system whereby individual hospitals review and learn from each case of maternal death that occurs in the facility (35).

Health promotion and education of the public are important adjuncts to the provision of health services. Topics such as harmful customs (28), pregnancy complications (40), and safe places to deliver (41) all require attention in Zambia. Mass media should be used to educate the public about safe pregnancy and delivery, and community-based organizations should assist these efforts through systematic programs.

Finally, the education and training of health professionals is an integral part of providing high quality care and preventing maternal death and disability. While ratings suggest that curricula including hands-on obstetric care (82) have been developed, actual training in Zambia is generally poor, and was found to be weakest in the areas of in-service training for newly hired doctors (8) and training for new midwives and nurses (8).

## Global Comparisons

Overall, the experts gave maternal and neonatal health services in Zambia a rating of 47, compared to an average of 56 for the 49 countries involved in the MNPI study. This rating places services in Zambia 45<sup>th</sup> among the 49 countries. Zambia's services were ranked last when compared to the 13 developing countries studied from the sub-Saharan Africa region.<sup>11</sup> While comparisons across countries should be made with a certain degree of caution – given the subjective nature of expert opinions and evaluations in different countries – these comparisons may help maternal health care advocates and providers in Zambia identify priority action areas. It is also important to keep in mind that average scores may mask the differences among provinces within each country.

Table 1 compares Zambia's scores to the global averages for nine selected items of the MNPI. The table shows that Zambia's ratings for maternal and neonatal health services lag behind the global averages in each category. The largest disparities between Zambia and the global assessment are found in postabortion family planning (37 vs. 54, respectively), rural access to safe motherhood services (24 vs. 39), and emergency obstetric care (40 vs. 55). Zambia's highest ratings are for immunization (68) and maternal health policy (66). The indicators receiving the lowest ratings in Zambia – and perhaps requiring urgent attention – are the 48-hour postpartum checkup (17), voluntary counseling and testing for HIV (21), and rural access (24).

**Table 1. Comparison of global and Zambia MNPI scores for selected items, 1999**

Indicators of Maternal and Neonatal Services	Global Assessment (49 country average)	Zambia
Access to safe motherhood services by pregnant women*		
Rural access	39	24
Urban access	68	56
Able to receive emergency obstetric care	55	40
Provided appointment for postpartum checkup within 48 hours	41	17
Immunization**	76	68
Encouraged to begin immediate breastfeeding	74	61
Offered voluntary counseling and testing for HIV	30	21
Postabortion family planning	54	37
Adequate maternal health policy	72	66
Adequate budget resources	48	39
<b>Overall rating</b>	<b>56</b>	<b>47</b>
*Refers to composite scores for all the rural and urban access items.		
**Refers to a composite of three immunization items: maternal tetanus immunization, DPT immunization, and other immunizations scheduled.		



## Summary

The MNPI ratings indicate that Zambia has a moderate national policy on safe motherhood, and curricula for training health care providers have been developed to some degree. The country must now make sure that these efforts are improved and translated into high quality, accessible services and programs at the local level. The ratings suggest that women, overall, have reasonable access to some types of services, including antenatal care (e.g., tetanus immunization), newborn care, and some family planning methods (e.g., pills). However, there are vast disparities in urban and rural access to many services. Moreover, women in all

regions need access to improved delivery care, including skilled attendants at birth, a 48-hour postpartum checkup, and emergency obstetric care. Voluntary counseling and testing for HIV is also extremely limited, which may be a concern since about 20 percent of Zambia's adult population (age 15-49) is living with HIV/AIDS.<sup>12</sup> Finally, as in most other countries, maternal and neonatal health care services in Zambia face resource shortages – from both the public and private sectors – that hamper expansion of services to adequately meet the needs of women.

## Priority Action Areas

The following interventions have been shown to improve maternal and neonatal health and should be considered in Zambia's effort to strengthen maternal and neonatal health policies and programs.

- **Increase access to reproductive health, sexual health, and family planning services, especially in rural areas.** Due to the lack of access to care in rural areas, maternal death rates are higher in rural areas than in urban areas. In addition, many men and women in rural and urban areas lack access to information and services related to HIV/AIDS and other STIs.
- **Strengthen reproductive health and family planning policies and improve planning and resource allocation.** While the MNPI scores demonstrate that many countries have strong maternal health policies, implementation of the policies may be inadequate. Often, available resources are insufficient or are used inefficiently. In some cases, advocacy can strengthen policies and increase the amount of resources devoted to reproductive health and family planning. In other cases, operational policy barriers – barriers to implementation and full financing of reproductive health and family planning policies – must be removed.
- **Increase access to and education about family planning.** Another feature that relates closely to preventing maternal mortality is the provision of family planning. Family planning helps women prevent unintended pregnancies and space the births of their children. It thus reduces their exposure to risks of pregnancy, abortion, and childbirth. Reliable provision of a range of contraceptive methods can help prevent maternal deaths associated with unwanted pregnancies.
- **Increase access to high quality antenatal care.** High quality antenatal care includes screening and treatment for STIs, anemia, and detection and treatment of hypertension. Women should be given information about appropriate diet and other healthy practices and about where to seek care for pregnancy complications. The World Health Organization's recommended package of antenatal services can be conducted in four antenatal visits throughout the pregnancy.
- **Increase access to skilled delivery care.** Delivery is a critical time in which decisions about unexpected, serious complications must be made. Skilled attendants – health professionals such as doctors or midwives – can recognize these complications, and either treat them or refer women to health centers or hospitals immediately if more advanced care is needed. Women in rural areas live far distances from quality obstetric care, so improvements depend greatly on early recognition of complications, better provisions for emergency treatment, and improved logistics for rapid movement of complicated cases to district hospitals. Increased medical coverage of deliveries, through additional skilled staff and service points, are basic requirements for improving delivery care. Reliable supply lines and staff retraining programs are also critical.
- **Provide prompt postpartum care, counseling, and access to family planning.** It is important to detect and immediately manage problems that may occur after delivery, such as hemorrhage, which is responsible for about 25 percent of maternal deaths worldwide. Postpartum care and counseling will help ensure the proper care and health of the newborn. Counseling should include information on breastfeeding, immunization, and family planning.
- **Improve postabortion care.** About 13 percent of maternal deaths worldwide are due to unsafe abortion. Women who have complications resulting from abortion need access to prompt and high quality treatment for infection, hemorrhage, and injuries to the cervix and uterus.
- **Strengthen health promotion activities.** Mass media should be used to educate the public about pregnancy and delivery, and community-level organizations should assist this through systematic programs. An important step for health promotion, in order to prevent negative maternal health outcomes, is to have the Ministry of Health supply adequate educational materials regarding safe practices.

## References

<sup>1</sup> The source used to calculate these figures is the 1995 WHO/UNICEF/UNFPA estimate of maternal mortality. See Hill, K., C. AbouZahr, and T. Wardlaw. 2001. "Estimates of Maternal Mortality for 1995," *Bulletin of the World Health Organization* 79 (3): 182-193.

<sup>2</sup> Obstetric fistula occurs as a result of a prolonged and obstructed labor, which in turn is further complicated by the presence of female genital cutting. The pressure caused by the obstructed labor damages the tissues of the internal passages of the bladder and/or the rectum and, with no access to surgical intervention, the woman can be left permanently incontinent, unable to hold urine or feces, which leak out through her vagina. (UNFPA Press Release, July 2001)

<sup>3</sup> MEASURE Communication. 2000. *Making Pregnancy and Childbirth Safer*. (Policy Brief) Washington, DC: Population Reference Bureau. Available at <http://www.prb.org/template.cfm?Section=PRB&template=/ContentManagement/ContentDisplay.cfm ContentID=2824>

<sup>4</sup> World Health Organization. 2001. *Advancing Safe Motherhood through Human Rights*. Available at [http://www.who.int/reproductive-health/publications/RHR\\_01\\_5\\_advancing\\_safe\\_motherhood/RHR\\_01\\_05\\_table\\_of\\_contents\\_en.html](http://www.who.int/reproductive-health/publications/RHR_01_5_advancing_safe_motherhood/RHR_01_05_table_of_contents_en.html)

<sup>5</sup> Dayaratna, V., W. Winfrey, K. Hardee, J. Smith, E. Mumford, W. McGreevey, J. Sine, and R. Berg. 2000. *Reproductive Health Interventions: Which Ones Work and What Do They Cost?* (Occasional Paper No. 5) Washington, DC: POLICY Project. Available at <http://www.policyproject.com/pubs/occasional/op-05.pdf>

<sup>6</sup> Population Reference Bureau. 2001. *Abandoning Female Genital Cutting: Prevalence, Attitudes, and Efforts to End the Practice*. Washington, DC: Population Reference Bureau. Available at [http://www.prb.org/pdf/AbandoningFGC\\_Eng.pdf](http://www.prb.org/pdf/AbandoningFGC_Eng.pdf)

<sup>7</sup> The MNPI was conducted by the Futures Group and funded by the U.S. Agency for International Development (USAID) through the MEASURE Evaluation Project. For more information on the MNPI, see Bulatao, R. A., and J. A. Ross. 2000. *Rating Maternal and Neonatal Health Programs in Developing Countries*. Chapel Hill, NC: MEASURE Evaluation Project, University of North Carolina, Carolina Population Center.

<sup>8</sup> This methodology for rating policies and programs was originally developed for family planning and has also been used for HIV/AIDS. See Ross, J. A., and W. P. Mauldin. 1996. "Family Planning Programs: Efforts and Results, 1972-1994." *Studies in Family Planning* 27 (3): 137-147. Also see UNAIDS, USAID, and POLICY Project. 2001. "Measuring the Level of Effort in the National and International Response to HIV/AIDS: The AIDS Program Effort Index (API)." Geneva: UNAIDS.

<sup>9</sup> Population Reference Bureau. 2001. *2001 World Population Data Sheet*. Washington, DC: Population Reference Bureau. Available at [http://www.prb.org/Content/NavigationMenu/Other\\_reports/2000-2002/sheet4.html](http://www.prb.org/Content/NavigationMenu/Other_reports/2000-2002/sheet4.html)

<sup>10</sup> In the MNPI survey instrument, the term "trained" was used because it is empirically concrete for the respondent, whereas "skilled" is more subjective. Asking respondents about skill levels would require them to judge the probable quality of the original training and the deterioration of skills over time. While knowing about skills is really more critical, it throws more subjectivity into the data and, as a factual matter, skills were not measured.

<sup>11</sup> Countries in the sub-Saharan Africa region that were included in this index are: Angola, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Nigeria, South Africa, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.

<sup>12</sup> See UNAIDS. *Report on the Global HIV/AIDS Epidemic, June 2000*. Available at [http://www.unaids.org/epidemic\\_update/report/Epi\\_report.htm](http://www.unaids.org/epidemic_update/report/Epi_report.htm)

## For More Information

A complete set of results, including more detailed data and information, has already been sent to each of the participating countries. For more information, contact:

The Maternal Health Study (MNPI)  
Futures Group  
80 Glastonbury Blvd.  
Glastonbury, CT 06033 USA

E-mail: [j.ross@tfgi.com](mailto:j.ross@tfgi.com)  
Fax: J.Ross +1 (860) 657-3918  
Website: <http://www.futuresgroup.com>

This brief was prepared by the POLICY Project. POLICY is funded by USAID and implemented by Futures Group, in collaboration with The Centre for Development and Population Activities (CEDPA) and Research Triangle Institute (RTI).